

Efficacy of Bee Venom as an Anti-Viral Therapy for HCV Genotype 4

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Abstract

Use of traditional medicine is encouraged in many economically diverse countries when conventional medications fail. HCV prevalence is highest in Egypt at >10%

Index terms— bee venom, HCV, traditional, therapy.

1 Introduction

lobally, it was estimated that in 2005, more than 185 million people had hepatitis C virus (HCV) antibodies; (prevalence of 2.8 percent) HCV prevalence is highest in Egypt at >10% of the general population and China has the most people with HCV (29.8 million), [1,2] Most cases of acute hepatitis C are anicteric and asymptomatic, with fewer than 25 percent being clinically apparent. Fulminant hepatitis C is rare. Nevertheless, the long-term liability of acute hepatitis C is significant due to the high rate of chronic infection (HCV-RNA positive in 55 to 85 percent of cases) and chronic hepatitis (elevated serum ALT concentration in 60 to 80 percent of patients with chronic infection). Approximately 20 to 30 percent of those chronically infected will develop cirrhosis, and a proportion of those patients will develop hepatocellular carcinoma [3,4,5,6]. Treatment with Peginterferon and weight-based ribavirin alone results in sustained virologic response rates of only 40 to 50 percent in patients with chronic HCV genotype 4 [7,8,9]. Traditional medicines have been used for medicinal purposes for thousands of years. All major cultures including Native American, European, South American, Asian, and African cultures have used botanicals for healing purposes. As an example, saw palmetto was used for urinary symptoms in men from Egypt in the 15th century BC [10].

2 II.

3 Patients and Methods

We evaluated traditional bee sting venom medicine and reviewed the cases of five Egyptian patients infected with HCV genotype 4. This group included middle-aged adults, four males and one female, with an average age of 43.6 years.

The average BMI was 28, and all patients had chronic HCV infection. Three patients had portal hypertension causing splenomegaly and porto-systemic collateral shunt vessels. Two patients had thrombocytopenia, thyroiditis, and arthralgia related to HCV infection. All patients were instructed to discontinue all medications except those for hypertension.

All patients were administered bee venom using the traditional Egyptian medicine protocol. A total of three to five bee stings were applied above the knee joint. This was performed three times per week for 3 months. Bee death following the procedure was evidence of successful venom injection.

4 III.

5 Results

Surprisingly, one male patient showed a sustained viral response (SVR) by PCR following 3 months of treatment. Qualitative PCR was repeated 6 and 12 months following conclusion of the bee sting treatment protocol. IV.

6 Discussion

Use of traditional medicine is encouraged in many economically diverse countries when conventional medications fail. Disease progression in patients undergoing conventional treatment causes frustration and feelings of oppression and defeatism, which can lead to depression. This is particularly true for highly intellectual individuals. Depression has significant effects on the immune system, and increases morbidity/mortality, resulting in serious adverse events and multisystem infection. Disease progression is directly related to the effect of depression on the immune system. The patient is then conflicted, as he must fight a hidden enemy, the virus, within his body. This creates a potentially tragic scenario.

of interferon, currently the only approved therapy, is Egypt has the highest prevalence of chronic hepatitis C virus (HCV) in the world; >10% of the population is infected. Most cases of acute hepatitis C are asymptomatic, with fewer than 25 percent being clinically apparent. Fulminant hepatitis C is rare. Nevertheless, the long-term liability of acute hepatitis C is significant due to the high rate of chronic infection (HCV-RNA positive in 55 to 85 percent of cases) and chronic hepatitis (elevated serum ALT concentration in 60 to 80 percent of patients with chronic infection). Approximately 20 to 30 percent of those chronically infected will develop cirrhosis, and a proportion of those patients will develop hepatocellular carcinoma. The use frustrating in many situations. This is because coinfection with *Schistosoma* spp., genotype resistance, complications of interferon/ribavirin therapy, long Figure ?? : showing different traditional medicine used in Egypt especially in Saharan and Sub-Saharan regions for the therapy of chronic diseases especially those with HCV genotype 4 treatment courses, and relapses, lead to poor outcomes compared to infection with genotypes 2 and 3 [11,12,13]. In patients with significant fibrosis, our approach depends upon the patient's HCV genotype. In patients HCV genotype 1 or 4, guidelines recommended IL28B genotype to determine if the patient is likely to respond to therapy. Accordingly we prefer to withhold antiviral therapy if the patient does not have a favorable genotype (CC at the rs12979860 polymorphic site). However, in an otherwise healthy patient with HCV genotype 1 or 4 and a favorable IL28B genotype, treatment is reasonable with close monitoring for side effects. Unfortunately many HCV genotype 4 patients have not the favorable genotype, especially those live in Egypt.

Use of traditional Egyptian therapy has been strongly encouraged in the last 10 years throughout Egypt.

Use of camel milk or drinking copious amounts of urine with or without moxibustion by fire, acupuncture and cupping, especially in the Saharan and Arabian areas, is currently popular in Egypt (figure ??). Some traditional Egyptian medicine is related to Arabian, ancient Egyptian, or other religious beliefs. Most patients using traditional therapies show improvement over time in both clinical symptoms and laboratory results. Patients have been found to have significantly decreased ascetic fluid volume or resolution of ascites, improved libido and stamina, improved renal function tests (particularly excretion function), and a significantly decreased viral load.

In the current study we evaluated traditional bee sting venom medicine and reviewed the cases of five Egyptian patients infected with HCV genotype 4;(4 males and 1 female), with 43.6 average age and 28 average calculated BMI, surprisingly one male patient [14]. Few studies have indicated that administration of Bee Venom can significantly impart an anti arthritic response and initiate the protective mechanism against hepatic fibrosis [15]. showed a sustained viral response (SVR) by PCR following 3 months of treatment, qualitative PCR was repeated 6 and 12 months following conclusion of the bee sting treatment protocol, all patients showed improvement in the general condition. Arthralgia, glucose intolerance, itching and tyroditis subsided accompanied with better sonographic pictures following 3 months of the therapy.

It is well known that Bee Venom consists of several biologically active peptides, including mellitin, apamin, adolapin and mast cell degranulating peptide To our knowledge no reports mentioned the traditional therapeutic use of Bee Venom as an effective therapy against HCV genotype 4, but we need to know more about the mechanism of action, either through antiviral mechanism or immunostimulation therapy, whatever emerging of new drugs e.g.: Sofosbuvir and Simebrevir may be the clue for the therapy of HCV different genotypes.

V.

7 Study Limitations

The response to traditional bee-venom-based medication should be further evaluated. The properties of the venom likely vary according to the flowers visited by, and the environment of, the bees.

We used our clinical knowledge to evaluate the results of this report. ¹

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142

Figure 1: a) Clinical 1 . 4 . 2 .

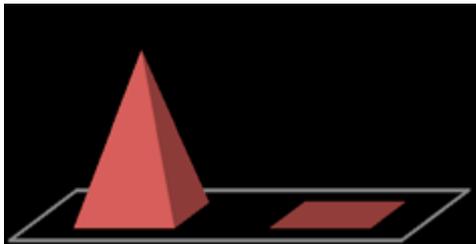


Figure 2:

1

Sex	Age	BEFORE BEE		PCR	AFTER VENOM THERAPY		BEE
		ALT	AST		ALT	AST	
M	24	48	47	140,000	30	31	SVR
M	34	50	52	166,000	24	35	1500
M	44	65	55	7,			

[Note: showing Liver enzymes pre and post Venom Therapy. There is also evidence of ALT, AST improvement post Venom therapy. (Normal ALT, AST values); Up to 40 and 45 respectively. (Normal PCR); Undetectable viremia by TMA Test.]

Figure 3: 255,000 25 33 1,200,000Table 1 :

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